



# **information on courses & workshops 1986/87**

**training &  
certification**

TD  
178.4  
.06  
I542  
1986  
MOE



**Ministry  
of the  
Environment**

The Honourable  
Jim Bradley  
Minister

Rod McLeod  
Deputy Minister

#### Copyright Provisions and Restrictions on Copying:

This Ontario Ministry of the Environment work is protected by Crown copyright (unless otherwise indicated), which is held by the Queen's Printer for Ontario. It may be reproduced for non-commercial purposes if credit is given and Crown copyright is acknowledged.

It may not be reproduced, in all or in part, part, for any commercial purpose except under a licence from the Queen's Printer for Ontario.

For information on reproducing Government of Ontario works, please contact Service Ontario Publications at [copyright@ontario.ca](mailto:copyright@ontario.ca)



Ministry  
of the  
Environment

Ministère  
de  
l'Environnement

135 St. Clair Avenue West  
Suite 100  
Toronto, Ontario  
M4V 1P5

135 ouest, avenue St. Clair  
Bureau 100  
Toronto (Ontario)  
M4V 1P5

TD  
178-4036  
0575

1986-87

memorandum: April 1, 1986.

To: Branch/Regional Directors,  
Branch/Regional Managers/Supervisors,  
District Officers.


From: R.R. Doddridge, P. Eng.,  
Mgr., Training & Certification Section,  
Human Resources & Personnel Development Branch.

Re: **INFORMATION ON COURSES AND WORKSHOPS  
1986/87**

Herewith a copy of our publication on Courses and Workshops scheduled for the 1986/87 training season. Additional copies are available on request.

Please note the Registration procedures on page 5 and 6. Ministry applications must be submitted on MOE Form 0144 (3/85), a sample of which is attached. So that registration fees can be recovered by journal entry, the appropriate budget codes must be included.

Included is a brief outline of staff development programs to be offered by Human Resources and Personnel Development Branch during the 1986/87 period. Dates and locations in some cases are still to be decided.



R.R. Doddridge

Human Resources and  
Personnel Development Branch

Professional Development Program 1986/87

The following professional development courses/workshops are offered by the Human Resources Section.

- . Preparing for Supervision And Management
- . Management One: The Basic Fundamentals of Supervision
- . Interpersonal Skills for Managers and Supervisors
- . Surviving a Performance Review Interview
- . Project/Task Force Management
- . Participative Management
- . Managing Your Employees' Stalled Careers

Where a need arises, other courses/workshops may be added. Notification of any additions will be sent to the Branch/Regional Directors.

Nominations for the above courses/workshops should be submitted on the MOE Form #1511, Request/Authorization for Staff Development for Courses and Conferences.

For further information contact Carole Calder (416) 451-5750.



## **Preparing for Supervision and Management**

### **Purpose**

This workshop will introduce individuals with supervisory or managerial potential to the roles, responsibilities and skills required to supervise and manage. It will also help individuals assess whether or not a career progression in supervision or management is appropriate.

### **Who Should Attend**

Individuals who have the potential and desire to become supervisors or managers.

### **Format**

Short lectures, reading assignments, case studies, group discussions.

**Location** Brampton Training Centre

**Dates** To be arranged (2 day workshop)

**Cost** Approximately \$100.00

**Seminar Leader** Dave Heming

**Management One**  
**The Basic Fundamentals of Supervision**

**Purpose**

This workshop will introduce supervisors with little or no formal supervisory education and training to the basic fundamentals of supervision.

**Who Should Attend**

Those employees who are newly appointed to supervision and more experienced practicing supervisors.

**Format**

Short lectures, reading assignments, case studies, group discussions.

**Location**      Brampton Training Centre

**Date**            To be arranged (3 day workshop)

**Cost**            Approx. \$125.00

**Seminar Leader**    Dave Heming

## **Interpersonal Skills for Managers and Supervisors**

### **Purpose**

Effective communication is essential. As well as an awareness and understanding of some basic principles of effective communication, a manager must have the interpersonal and interactive skills to communicate with others. This workshop will help participants become aware of how verbal and non-verbal messages are received by others. It will also assist them to have a better understanding of their impact on others.

### **Who Should Attend**

Managers who wish to improve their interpersonal skills and their communication in the workplace. Limited to 12 participants.

### **Format**

Brief lectures, group discussions, role playing.

**Location** Brampton Training Centre

**Dates** October 15, 1986 (1 day workshop)  
Other dates to be arranged

**Cost** Approx. \$125.00

**Seminar Leader** Stephen Taylor

## **Surviving A Performance Review Interview**

### **Purpose**

This one day workshop will assist managers in developing the understanding and skills required for conducting performance review interviews with subordinates.

### **Who Should Attend**

Managers who have the responsibility for performance management reviews. Limited to 12 participants.

### **Format**

Group discussions, written exercises, role playing.

**Location** Brampton Training Centre

**Date** October 16, 1986 (1 day workshop)  
Other dates to be arranged

**Cost** Approx. \$125.00

**Seminar Leader** Stephen Taylor

## **Project/Task Force Management**

### **Purpose**

The complexity of today's world results in more and more work being done on a "special" or "one-of-a-kind" basis. In such situations, people from various parts of the organization and with a variety of skills and knowledge, are drawn together to work towards the final result. This workshop will provide participants with the skills and knowledge necessary for project/task force work.

### **Who Should Attend**

Line and staff personnel who must assume responsibility for, directly manage or participate in a complex project or task force.

### **Format**

High degree of participation in exercises and case studies.

**Location**      Brampton Training Centre.

**Dates**          To be arranged (3 day workshop).

**Cost**            Approx. \$250.00.

**Seminar Leader**    Jerry Dermer

## **Participative Management**

### **Purpose**

How one manages today will not be good enough for tomorrow. Progressive managers are preparing for changes, anticipating future demands, not merely reacting to them. This seminar is designed to help management prepare for these inevitable changes and challenges, with emphasis on participative management.

### **Who Should Attend**

Managers and supervisors who wish to focus on the skills and strategies required to ensure effective management.

### **Format**

Case analyses, brief lectures, small work groups, films, personal assessments, discussions and reading assignments.

**Location** Brampton Training Centre.

**Dates** To be arranged (3 day workshop).

**Cost** Approx. \$250.00

**Seminar Leaders** David Weiss  
Faheem Rauf

## **Managing Your Employees' Stalled Careers**

### **Purpose**

This workshop will offer managers a wide array of alternatives for enriching the jobs of their employees. It will also show them specific ways to improve the general work environment of their department.

### **Who Should Attend**

Managers and supervisors who are frustrated. They are unable to develop their employees because organization policies have reduced advancement opportunities. They are also looking for ways to "turn on" their once productive older employees.

### **Format**

Case study, modelling, exercises, small group discussion, pre-workshop interviews.

**Location**      Brampton Training Centre.

**Date**            September 30, 1986 (1 day workshop)

**Cost**            Approx. \$125.00.

**Seminar Leader**    Stephen Taylor

Workshops for Management and Supervisory staff are also offered by the Personnel Operations Section.

**POSITION SPECIFICATION WRITING WORKSHOP** - The What, How and Why  
- Duration one day

**CLASSIFICATION GRIEVANCE WORKSHOP** - Cause, prevention and procedures  
- Duration one and one-half days

These workshops, designed for twelve participants, can be presented at Regional locations or individual nominees may attend a central workshop at the Brampton Training Centre. Dates to be announced.

For further information contact Syd Feeley (416) 965-1027.



### **Training Philosophy:**

1. In general, programs employ the Behavioural Objectives Approach to Training (BOAT). A training manual, prepared for each course or workshop, as a reference text, provides information on the topics and lists objectives which tell the trainee what he must know and do to successfully complete the course. At the same time it reminds the instructor what he must teach, describe or demonstrate so that the performance of the trainee meets the required standards. To verify successful completion, both practical (hands-on) and written tests are administered to the trainees.
  
2. Instructors are obtained from many sources and have usually been involved in developing material for the courses and workshops. As part of their normal work they are usually also responsible for providing advice, guidance and practical assistance to the operational staff, so they understand the day-to-day problems faced in the field. Based on this knowledge and background, the instructor can deal with any relevant questions raised during the course or workshop. Furthermore, he is identified to the trainee as a point of contact for advice on problems which might arise.

### **Scope of Program:**

3. A program of courses, workshops and seminars is offered, annually, between September and May. Depending on commitments, the Training and Certification Section, if requested, will also visit a particular locality at a mutually agreed time and conduct certain of its programs or a one or two day mini-course on specific topics such as Preventive Maintenance, Pump Operations and Gas Chlorination. If a Municipality, Ministry Region or other organization wishes to conduct a program locally, the Section is prepared to advise and assist.
4. Training programs offered by this Ministry are, in general, of five day duration (Monday to Friday incl.). They are described in the attached Appendices, listed below:

### **Appendix:**

1. Basic Sewage Treatment Operation
2. Activated Sludge Workshop
3. Sludge Digestion and Handling
4. Digester Gas System Maintenance Workshop
5. Op/Maintenance of Wastewater Collection Systems
6. Op/Maintenance of Wastewater Pump Stations
7. Control of Liquid Industrial Waste
8. Basic Water Treatment Operation Course
9. Surface Water Treatment Workshop

10. Op/Maintenance of Water Distribution Systems
11. Water Supply System Operations
12. Basic Gas Chlorination Workshop
13. Laboratory Skills for Plant Operators
14. Confined Space Entry
15. Instrumentation & Control
16. Preventive Maintenance
17. Advanced Water and Wastewater Treatment
18. Municipal & Private Water Treatment for EOs
19. Municipal & Private Wastewater Treatment for EOs
20. Air Abatement for EOs
21. Industrial Wastewater Treatment for EOs
22. Waste Management for EOs
23. Visible Emissions Identification Certificate Course
24. Environmental Law Enforcement
25. Sewer and Watermain Design Course
26. MEA/MOE Inspectors Course - Construction of  
Sewers & Watermains
27. Introductory Environmental Noise Course
28. Environmental Noise Certificate Course
29. Environmental Noise in Land Use Planning

5. The program schedule is at Appendix 30 and a course calendar is at Appendix 31.

**Prerequisites:**

6. (a) Prerequisites are specified for some courses.  
Employers must ensure that course candidates meet these requirements. If an application is received for a candidate lacking the course prerequisites, it will not be accepted.
- (b) Certain advanced courses require the Ministry Basic Water or Sewage Course or equivalent as a prerequisite. Equivalents to the Ministry Basic Courses include the courses previously offered by the OWRC;
- (c) Certain courses, because of prerequisites and/or course design, are restricted to specific groups

**Course Capacity:**

7. The capacity of each course, workshop and seminar is shown on Appendix 30 Program Schedule.

**Application Procedures:**

8. (a) Those attending Ministry technical training courses fall into two classifications:-
  - (1) Ontario Government employees
  - (2) Staff other than (1) above

- (b) Applications for Ministry of the Environment employees will be submitted on the MOE form (0144 (3/85) Application for Technical Training Courses/Workshops/Seminars.
  - (c) Employees of organizations of the Provincial Government other than the Ministry of the Environment will submit a letter requesting registration and include budget codes for journal entries.
  - (d) All other applications will be by letter and should include the registration fees, payable by cheque/money order to the Treasurer of Ontario.
  - (e) No verbal applications will be accepted.
9. The following information will be included in letters of application for non-Ministry personnel:-
- (a) Course and date. An acceptable alternate, if available, should be shown.
  - (b) Full name of applicant and home address.
  - (c) Job title, address of employment and department or office.

10. An application should be forwarded to the

**Ministry of the Environment**

**Training & Certification Section**

**135 St. Clair Avenue West**

**Toronto, Ontario M4V 1P5 Attn: Registration Secretary**

desirably no later than two months prior to the date of the course.

11. If a course is over-subscribed, selection of candidates will be based on date of receipt of application. As soon as possible after its receipt, the individual's employer will be notified if the application is accepted. If the course of first choice is over subscribed and an alternate has been shown on the application, the nominee will be listed for the alternative course (if space is available), subject to confirmation by the employer.

**Registration Fee:**

12. The required registration fee for each course is stated in the appropriate appendix. **Registration fees must accompany the applications from all those other than Province of Ontario Government Employees, and**

- (a) for all courses except MEA/MOE co-sponsored courses (Appendices 25 and 26), the cheque or money order must be made payable to The Treasurer of Ontario.
- (b) for MEA/MOE co-sponsored courses (Appendices 25 and 26) the cheque or money order must be made payable to Municipal Engineers Association of Ontario.

- (c) fees are refundable only if a cancellation is notified at least one month prior to the course.
- (d) requests for transfers will only be accepted if notified fifteen days prior to the course.

**Pre-Course Study:**

- 13. Prior to a course, an information package will be forwarded to each applicant. This will include general course information, a sketch map showing course location and, in most cases, reference material for pre-course study. It is essential that employers encourage applicants to review the study material provided. For certain courses, the applicant will be required to submit solutions to problems forwarded with study material.

**Course Completion:**

- 14. The appropriate appendix shows the minimum average to be attained for successful completion of the course. A candidate's results and a certificate or seal will be forwarded to his employer, who is responsible for informing the individual.

15. As do many other organizations, such as the WPCF, AWWA and APWA, Environment Ontario now awards Continuing Education Units (CEUs) to participants who successfully complete certain courses or workshops. A permanent record of CEUs awarded to individuals will be maintained by the Training and Certification Section. A participant may request this record to use, if necessary, to meet requirements for:

- (a) Documentation of continuing qualifications for certification of operational staff of a water or wastewater utility;
- (b) Evidence of personal and vocational growth and adjustment to meet changing career demands;
- (c) Demonstration of a conscious effort towards personal development.

CEUs are awarded on the basis that one (1) CEU is equal to ten contact hours of formal instruction in job related training. Thus, for example, 3.0 CEUs will be awarded for successful completion of the Activated Sludge Process Workshop, since it involves 30 hours of formal instruction. The assigned value is shown in the appropriate appendix in this publication.



**Training Facilities:**

16. (a) These are located at the Ontario Experimental and Training Facility, Brampton. The sketch map at Appendix 32 shows the location.
- (b) Training conducted outside of Toronto will be held in suitable accommodation obtained specifically for the session.
- (c) Course locations are shown at Appendix 30.

**Transportation and Accommodation:**

17. These arrangements, including reservations, are the responsibility of the trainee. Appendix 32 indicates the motel/hotel area which is within reasonable proximity to the training facilities. A list of hotels with approximate room costs is at Appendix 33.
18. Employers must ensure that trainees on arrival at the training location are in possession of sufficient funds to meet anticipated expenses.

## Training Manuals:

19. Training manuals published by the Ministry of Environment are available for purchase from:

Publications Services  
Ministry of Government Services  
880 Bay Street, (5th Floor)  
Toronto, Ontario M7A 1N8

These include:

Basic Sewage Treatment Operation	\$ 6.50
Activated Sludge Process	7.00
Primary Treatment and Sludge digestion	2.00
Basic Water Treatment Operation	7.50
Surface Water Treatment Operation	7.00
Basic Gas Chlorination	6.00
Preventive Maintenance	7.50
Digester Gas System Maintenance	2.00
Water Distribution System OP/MTCE.	7.50
Control of Industrial Waste in Mun.	3.00
Mathematics for Water & Wastewater Operators	4.00
Confined Space Entry	5.00
Industrial Abatement Air Management	
Vol. 1 and Vol. 2	2.00
Lab Skills for Operators, Vol. 2	4.00

20. Manuals published by The Ontario Municipal Engineers Association include:

Sewer & Watermain Design Manual	\$ 15.00
Sewer & Watermain Construction Inspectors Manuals I and II	\$ 5.00 ea.

These are available for purchase by writing to:

Mr. Don J. McDonald  
MEA Treasurer & Publications Secretary  
20 Pitt Street  
Cornwall, Ontario. K6J 3P2

Tel. # (613) 932-1515

21. Prices are subject to change without notice.

## Course Description

### Basic Sewage Treatment Operation Course

#### Purpose:

The Basic Sewage Treatment Operation Course is designed primarily for operators in training and to increase on-the-job efficiency of wastewater treatment plant operators. The program stresses "the need to know" of all processes associated with wastewater treatment. This course is a prerequisite to the Activated Sludge Workshop and the Sludge Digestion and Handling Workshop. CEU Value 3.0

#### Scope:

The course covers the following topics:

- A. SEWAGE CHARACTERISTICS
- B. BACTERIOLOGY OF SEWAGE
- C. PRIMARY TREATMENT
- D. THE ACTIVATED SLUDGE PROCESS
- E. DIGESTION OF SLUDGE
- F. SLUDGE HANDLING
- G. INDUSTRIAL WASTE
- H. CHLORINATION OF SEWAGE

- I. BASIC LABORATORY TESTS
- J. SAMPLING AND RECORD KEEPING
- K. SAFETY

**Pre-Course Familiarization:**

Pre-course study material will be provided. When preparing to attend this course, an applicant must:

- (a) Review the Ministry manual, Basic Sewage Treatment Operation;
- (b) Complete the exercise in the Ministry manual, Mathematics for Water and Sewage Operators.

**Prerequisites:**

- (a) Employment and desirably 6 months experience in the operation of a wastewater treatment plant;
- (b) Desirably Grade XII academic standing.

**Passing Grade:**

70 per cent

**Registration Fee:**

\$40.00

## **Course Description**

### **Activated Sludge Workshop**

#### **Purpose:**

This workshop emphasizes process control and trouble-shooting. It is specifically directed at an operator employed as, or likely to be promoted to, shift foreman, operator-in-charge or chief operator of an activated sludge plant. CEU Value 3.0

#### **Scope:**

The workshop which includes considerable "hands-on" participation covers the following:

- A. ACTIVATED SLUDGE OPERATING PRINCIPLES
- B. FACTORS AFFECTING THE PROCESS
- C. SAMPLING AND FLOW MEASUREMENT
- D. IDENTIFICATION AND SOLUTION OF OPERATING PROBLEMS
- E. PHOSPHORUS REMOVAL
- F. MICROSCOPIC EXAMINATION
- G. LABORATORY TESTS INCLUDING DO, pH, BOD

**Pre-Course Familiarization:**

Pre-course study material will be provided. When preparing to attend this workshop an applicant must:

- (a) Review the Ministry manual, Activated Sludge Process;
- (b) Complete the exercises in the Ministry manual, Mathematics for Water and Sewage Operators.

**Prerequisites:**

Successful completion of the Ministry of the Environment Basic Sewage Treatment Operation Course; or equivalent.

**Passing Grade:**

70 per cent

**Registration Fee:**

\$40.00

## **Course Description**

### **Sludge Digestion and Handling Workshop**

#### **Purpose:**

The Sludge Digestion and Handling Workshop emphasizes process control and troubleshooting. It is specifically directed at an operator employed as, or likely to be promoted to, shift foreman, operator-in-charge or chief operator of a primary treatment plant. CEU Value 3.0.

#### **Scope:**

The workshop which includes "hands-on" participation covers the following topics:

- A. RAW SEWAGE CHARACTERISTICS
- B. EQUIPMENT MAINTENANCE
- C. PRIMARY SEDIMENTATION
- D. ANAEROBIC AND AEROBIC DIGESTION - THEORY
  - OPERATION & CONTROL
  - PROBLEM SOLVING
- E. LABORATORY ANALYSES
- F. SLUDGE HANDLING & DISPOSAL
- G. GAS COLLECTION SYSTEMS.



**Pre-Course Familiarization:**

Pre-course study material will be provided. When preparing to attend this workshop, the applicant must:

- (a) Review the course training manual;
- (b) Complete the exercises in the Ministry manual Mathematics for Water and Sewage Operators.

**Prerequisites:**

Successful completion of the Ministry Basic Sewage Treatment Operation Course or equivalent.

**Passing Grade:**

70 per cent

**Registration Fee:**

\$40.00

## **Course Description**

### **Digester Gas Systems Maintenance Workshop**

#### **Purpose:**

As required by the Energy Act 1971 and related Regulations, the workshop is designed to upgrade the knowledge and skills of personnel who operate and maintain the gas system in a wastewater treatment plant. In addition to the workshop final examination, the individual may write the Ministry of Consumer and Commercial Relations (MCCR) examination for certification as a Maintenance Gas Fitter.

CEU Value 3.0.

#### **Scope:**

The workshop covers the following topics:

- A. DIGESTION PROCESS AND GAS PRODUCTION
- B. DIGESTER GAS SYSTEM COMPONENTS
- C. GAS PIPING
- D. FUELS AND COMBUSTION
- E. SAFETY
- F. FUELS SAFETY REGULATIONS & CODES

**Pre-Course Familiarization:**

When preparing to attend this workshop, an applicant should familiarize himself with digester operations, and review the Energy Act 1971, related Regulations and the Installation Codes for Natural Gas (CAN 1-B149.1-M80), Propane (CGA 149.2-1976) and Oil Burning Equipment (CSA Standard B139-71).

**Prerequisites:**

The applicant must be employed in the maintenance of the gas system in a wastewater treatment plant. Desirably he should have completed the MOE Sludge Digestion and Handling Workshop and have training in the procedures for safe entry into confined spaces.

**Passing Grade:**

- (a) 70 per cent
- (b) A passing grade of 75 per cent must be attained on the MCCR test for certification as a Maintenance Gas Fitter

**Registration Fee:**

\$40.00

plus

\$21.00 payable to "Treasurer of Ontario" if the individual elects to write the MCCR Certification examination.

## Course Description

### Operation and Maintenance of Wastewater Collection Systems

#### Purpose:

The Workshop, Operation and Maintenance of Wastewater Collection Systems, is designed for new staff and to increase on-the-job efficiency of others. On completion of this course and the associated MOE courses on preventive maintenance the individual will understand the operation of a collection system and be capable of operating and maintaining the system and correcting malfunctions of equipment. CEU Value 3.0.

#### Scope:

The following topics will be dealt with:

- A. DESIGN PARAMETERS
- B. PIPE MATERIALS
- C. LIFT STATIONS
- D. PLANNING FOR EMERGENCY SERVICES
- E. FLOW MEASUREMENT AND CONTROL

- F. INSPECTION AND TESTING
- G. CLEANING, MAINTENANCE AND REPAIR
- H. RECORDS AND ORGANIZATION
- I. SAFETY

**Pre-Course Familiarization:**

An applicant must review the reference notes on Operation and Maintenance of Wastewater Collection Systems.

**Prerequisites:**

- (a) Employment in the operation and/or maintenance of a wastewater collection system;
- (b) Desirably Grade XII academic standing.

**Passing Grade:**

70 per cent

**Registration Fee:**

\$40.00

**Course Description**

**Operation and Maintenance of Wastewater Pump Stations**

**Purpose:**

The workshop, Operation and Maintenance of Wastewater Pump Stations, is designed for entry level operations staff and to increase on-the-job efficiency of others. On completion of this workshop, and the associated course on preventive maintenance, the individual will be capable of operating and maintaining lift stations and related equipment. CEU Value 3.0.

**Scope:**

The following topics will be dealt with:

- A. SEWAGE CHARACTERISTICS
- B. SAFETY/WORKING IN CONFINED SPACES
- C. STATION CONTROL SYSTEMS
- D. PUMP AND MOTOR APPLICATIONS
- E. STANDBY POWER

- F. STATION START-UP AND SHUT-DOWN
- G. ROUTINE AND PREVENTIVE MAINTENANCE
- H. RECORDS AND INSPECTION

**Pre-Course Familiarization:**

An applicant must review pre-course study material.

**Prerequisites:**

- (a) Employed in the operation and/or maintenance of a wastewater lift station;
- (b) Desirably Grade XII academic standing

**Passing Grade:**

70 per cent

**Registration Fee:**

\$40.00

## **Course Description**

### **Control of Liquid Industrial Waste**

#### **Purpose:**

The five day course, Control of Liquid Industrial Waste, is designed for those responsible for the enforcement of a Liquid Industrial Waste By Law. It will provide knowledge of and solutions to problems which result from industrial waste discharges into a storm sewer, a wastewater collection system or a wastewater treatment plant. CEU Value 3.0.

#### **Scope:**

The following topics will be dealt with:

- A. CHARACTERISTICS, PROBLEMS AND GENERAL TREATMENT METHODS OF SELECTED LIQUID INDUSTRIAL WASTES
- B. FLOW MEASUREMENT AND SAMPLING
- C. SURVEYS AND INSPECTIONS
- D. EMERGENCY PLANS
- E. REGULATIONS FOR HAULAGE AND DISPOSAL
- F. SAFETY
- G. MUNICIPAL CONTROL PROGRAM



**Pre-Course Familiarization:**

Pre-course study material, including a manual, will be provided. When preparing to attend, an applicant should familiarize himself with all aspects of the responsibilities of his organization for the control of liquid industrial wastes.

**Prerequisites:**

Those attending should have a good knowledge of wastewater treatment operations and have some responsibility for the functions dealt with on the course.

**Passing Grade:**

60 per cent

**Registration Fee:**

\$40.00

**Course Description**

**Basic Water Treatment Operation Course**

**Purpose:**

The Basic Water Treatment Operation Course is designed primarily for operators in training and to increase on-the-job efficiency of water treatment plant operators. The program stresses "the need to know" of all processes associated with water treatment. This course is a prerequisite to the Surface Water Treatment Workshop. CEU Value 3.0.

**Scope:**

The course covers the following topics:

- A. WATER SOURCES
- B. WATER BACTERIOLOGY AND SAMPLING
- C. PHYSICAL AND CHEMICAL CHARACTERISTICS
- D. COAGULATION, FLOCCULATION & SEDIMENTATION
- E. WATER FILTRATION
- F. CHLORINATION
- G. SAFETY

- H. BASIC LABORATORY TESTS
- I. RECORDS
- J. CHEMICAL DOSAGE CALCULATIONS

**Pre-Course Familiarization:**

Pre-course study material will be provided. When preparing to attend this course, an applicant must:

- (a) Review the Ministry manual, Basic Water Treatment Operation;
- (b) Complete the exercises in the Ministry manual, Mathematics for Water and Sewage Operators.

**Prerequisites:**

- (a) Employment and desirably six months experience in the operation of water treatment plants;
- (b) Desirably Grade XII academic standing.

**Passing Grade:**

70 per cent

**Registration Fee:**

\$40.00

## **Course Description**

### **Surface Water Treatment Workshop**

#### **Purpose:**

The Surface Water Treatment Workshop is designed to increase the knowledge of experienced water treatment plant operators. It is specifically directed to an operator employed as, or likely to be promoted to, shift foreman, operator-in-charge or chief operator of a water treatment plant. CEU Value 3.0.

#### **Scope:**

The workshop which includes considerable "hands-on" participation covers the following topics:

- A. BASIC WATER CHEMISTRY
- B. MICROBIOLOGICAL CONSIDERATIONS
- C. WATER TREATMENT CHEMICALS
- D. COAGULATION
- E. FILTRATION
- F. TASTE & ODOUR CONTROL
- G. LABORATORY TESTS
- H. PROBLEM SOLVING

**Pre-Course Familiarization:**

Pre-course study material will be provided. When preparing to attend this workshop an applicant must:

- (a) Review the Ministry manual, Surface Water Treatment;
- (b) Complete the exercises in the Ministry manual, Mathematics for Water and Sewage Operators.

**Prerequisites:**

Successful completion of the Ministry of the Environment Basic Water Treatment Operation course; or equivalent.

**Passing Grade:**

70 per cent

**Registration Fee:**

\$40.00

## **Course Description**

### **Operation and Maintenance of Water Distribution Systems**

#### **Purpose:**

The course, Operation and Maintenance of Water Distribution Systems, is designed for new staff and to increase on-the-job efficiency of others. On completion of this course and the associated MOE workshop on preventive maintenance, the individual will be capable of operating and maintaining water distribution systems, correcting malfunctions of equipment and performing quality control tests. CEU Value 3.0.

#### **Scope:**

The following topics will be dealt with:

- A. WATER SOURCES AND TREATMENT
- B. FACTORS IN PLANNING AND DESIGN
- C. WATER QUALITY OBJECTIVES
- D. WATERMAIN PIPES, JOINTS
- E. APPURTENANCES

- F.   HYDRAULICS
- G.   LEAK DETECTION, REPAIR, THAWING, RESTORATION
- H.   CLEANING, FLUSHING, DISINFECTION, CROSS  
      CONNECTIONS
- I.   REPORTS AND RECORDS, PUBLIC RELATIONS
- J.   SAFETY
- K.   CORROSION

**Pre-Course Familiarization:**

The applicant must review pre-course study material including the Ministry manual, Operation and Maintenance of Water Distribution Systems.

**Prerequisites:**

- (a)   Employed in operating and/or maintaining a  
      water distribution system;
- (b)   Desirably Grade XII academic standing.

**Passing Grade:**

70 per cent

**Registration Fee:**

\$40.00

**Course Description**

**Water Supply Systems Operator Workshop**

**Purpose:**

The Water Supply Systems Operator Workshop is designed to increase the knowledge and skills of inexperienced operators operating and maintaining small systems which employ minimum treatment.

CEU Value 3.0.

**Scope:**

The workshop will cover the following topics:

- A. CHARACTERISTICS OF GROUND WATER
- B. WELL PUMPS AND MAINTENANCE
- C. TYPES OF VALVES AND MAINTENANCE
- D. METER MAINTENANCE
- E. SMALL PLANT WATER TREATMENT
- F. DISINFECTION
- G. SAFETY
- H. STORAGE FACILITIES



- I. CORROSION
- J. THAWING WATERMAINS
- K. HYDRAULICS
- L. RESIDUAL TESTING

**Pre-Course Familiarization:**

Pre-course study material will be provided.

**Prerequisites:**

- (a) Six to twelve months experience in a  
water supply system
- (b) Desirably Grade XII Academic Standing.

**Passing Grade:**

70 per cent

**Registration Fee:**

\$40.00

## **Course Description**

### **Basic Gas Chlorination Workshop**

#### **Purpose:**

The Basic Gas Chlorination Workshop is designed to familiarize the new or inexperienced operator with the operation of various types of gas chlorination equipment, as well as to teach safety, maintenance and troubleshooting procedures. CEU Value 3.0.

#### **Scope:**

The workshop which includes considerable "hands-on" participation covers the following topics:

- A. CHLORINATION THEORY
- B. COMPONENTS OF A GAS CHLORINATION INSTALLATION
- C. CONTROL SYSTEMS
- D. STORAGE AND HANDLING OF CHLORINE GAS CYLINDERS
- E. SAFETY PRACTICES
- F. CHLORINATION EQUIPMENT & COMPONENTS
- G. START-UP & SHUT-DOWN PROCEDURES
- H. GENERAL MAINTENANCE
- I. TROUBLESHOOTING
- J. CHLORINATION LABORATORY TESTS

**Pre-Course Familiarization:**

Pre-course study material, including the Basic Gas Chlorination manual, will be provided.

**Prerequisites:**

Employment in a water or wastewater treatment plant or as an operator of gas chlorination equipment used in industry or recreational facilities.

**Passing Grade:**

70 per cent

**Registration Fee:**

\$40.00

## **Course Description**

### **Laboratory Skills for Plant Operators**

#### **Purpose:**

The workshop is designed to provide operators with the basic skills to carry out in-plant testing and analysis. The curriculum covers techniques, procedures and tests which provide information for day-to-day process control. A successful candidate will be capable of performing the laboratory tests in either a water or wastewater treatment environment.

CEU Value 3.0

#### **Scope:**

The following topics will be dealt with:

- A. SAMPLING TECHNIQUES FOR WATER AND WASTEWATER  
TREATMENT PROCESSES
- B. LABORATORY TECHNIQUES INCLUDING SAFETY
- C. OPERATION AND MAINTENANCE OF LABORATORY  
INSTRUMENTS
- D. LABORATORY TESTING USING:

- |                           |                        |
|---------------------------|------------------------|
| 1. Turbidimeters          | 6. Jar Testers         |
| 2. Spectrophotometers     | 9. D.O. Meters         |
| 3. Colour Comparators     | 10. pH Meters          |
| 4. Amperometric Titrators | 11. Analytical Balance |
| 5. Microscope             |                        |

**Pre-Course Familiarization:**

Pre-course study material will be provided. The applicant must ensure that he is knowledgeable in water and wastewater treatment processes.

**Prerequisites:**

- (a) Two or three years experience in plant operations;
  - (b) Successful completion of the Ministry of Environment Basic Sewage Treatment Operations Course and/or Basic Water Treatment Operations course;
  - (c) Desirably successful completion of the Ministry of Environment Activated Sludge Workshop and/or Primary Treatment and Digestion Workshop and/or Surface Water Treatment Workshop
- or
- acceptable equivalents.

**Passing Grade:**

70 per cent in written examination and demonstrated ability to carry out laboratory analyses.

**Registration Fee:**

\$40.00

## **Course Description**

### **Confined Space Entry Workshop**

#### **Purpose:**

This five day workshop takes a generic approach to the topic and is suitable for operations and supervisory personnel alike. Hands on experience for the participants reinforces the lecture theory given in class. Candidates have an opportunity to use the varied types of equipment and try different methods in performing actual confined space entries. Safe practices and procedures for entry and the correct operation and maintenance of equipment is emphasized through demonstration and practice.

CEU Value 3.0.

#### **Scope:**

The workshop includes presentations and "hands-on" practice of the following topics:

- A. SAFETY REQUIREMENTS INCLUDING A REVIEW  
OF THE OCCUPATIONAL HEALTH & SAFETY ACT,  
ASSOCIATED REGULATIONS AND MOE SAFETY POLICY
- B. PHYSICAL AND ATMOSPHERIC HAZARDS OF CONFINED  
SPACES.
- C. GENERAL PROTECTIVE EQUIPMENT.
- D. RESPIRATORY PROTECTION.

- E.   ATMOSPHERIC SENSING AND DETECTION.
- F.   ENTRY PROCEDURES.
- G.   EMERGENCY AND RESCUE TECHNIQUES.

**Pre-Course Familiarization:**

Pre-course study material will be provided. Attendees should review the manual, the Occupational Health and Safety Act and Regulations for Industrial Establishments. All candidates should have a copy of the Act and Regulations in their possession prior to attending the workshop. These are available from Publication Services at the address listed on page 10 of this brochure.

**Prerequisites:**

Desirably, candidates for this workshop should possess a First Aid certificate and be trained in Cardio-Pulmonary Resuscitation. In addition, all candidates should be in good physical condition so as to perform the required hands on tasks.

**Passing Grade:**

70 per cent in a written examination and the demonstrated technical skills to safely enter a confined space.

**Registration Fee:**

\$40.00



**Course Description**

**Instrumentation in Plant Process Control**

**Purpose:**

This course is designed to increase the knowledge of plant personnel in the application of instrumentation in water supply and wastewater treatment facilities. The curriculum deals with the principles of process control, why it is needed, typical methods of control including the types of instruments used in water and wastewater process control systems. It is an extension of training for operators and plant maintenance staff. CEU Value 3.0.

**Scope:**

The course includes presentations and discussions of the following topics:

- A. INTRODUCTION TO PROCESS VARIABLES,  
MANUAL AND AUTOMATIC CONTROL
- B. BASIC MODES OF CONTROL
- C. CONTROL FUNCTION
- D. FACTORS OF PROCESS CONTROL
- E. FEEDBACK CONTROL LOOPS

- F. SENSING DEVICES, TEMPERATURE, PRESSURE  
LEVEL
- G. TRANSMITTERS AND FINAL CONTROL ELEMENTS
- H. CONTROL MODES - TWO POSITION AND  
PROPORTIONAL CONTROL
- I. FLOW MEASUREMENT
- J. CHEMICAL FEED SYSTEMS
- K. PROCESS OPERATION BY COMPUTER

**Pre-Course Familiarization:**

Pre-course study material will be provided.

**Prerequisites:**

The applicant should have a good working knowledge of water and/or wastewater utility operation, and

(a) Two or three years experience in utility operations.

(b) Successful completion of Ministry of Environment course in

- Basic Sewage Treatment Operations, or  
Basic Water Treatment Operations
- Or Acceptable Equivalents.

**Passing Grade:**

70 per cent

**Registration Fee:**

\$40.00

**Course Description**

**Preventive Maintenance Workshop**

**Purpose:**

The Preventive Maintenance Workshop is designed to increase the knowledge and on-the-job efficiency of an operator who has some responsibility for maintaining water and wastewater plant equipment. It will teach the trainee good practices which are essential to achieve and sustain efficient operations. CEU Value 3.0.

**Scope:**

The workshop which includes "hands-on" participation covers the following topics:

- A. TYPES OF PUMPS
- B. DRAWINGS AND EQUIPMENT MANUALS
- C. MAINTENANCE OF PIPING AND VALVES
- D. LUBRICATION
- E. BEARINGS
- F. CHARACTERISTICS OF MATERIAL PUMPED
- G. PUMP SYSTEM CHARACTERISTICS
- H. PACKING AND MECHANICAL SEALS

- I. PUMP TROUBLESHOOTING
- J. MAINTENANCE OF STANDBY POWER UNITS
- K. ELECTRIC MOTORS

**Pre-Course Familiarization:**

Pre-course study material, including the Preventive Maintenance Workshop manual, will be provided.

**Prerequisites:**

The candidate must be employed in water or waste-water treatment utility operations and/or maintenance.

**Passing Grade:**

70 per cent

**Registration Fee:**

\$40.00

**Course Description**

**Advanced Water/Wastewater Treatment**

**Purpose:**

This three day seminar is designed to upgrade the knowledge of chief operators and plant superintendents.

The topics cover new treatment methods procedures and technologies. CEU Value 2.0.

**Scope:**

The seminar will deal with the topics listed below:-

- A. O & M PROBLEMS WITH RESERVOIRS
- B. MUNICIPAL WATER TANK COATINGS
- C. EMERGENCY PROCEDURES
- D. USE OF ACTIVATED CARBON
- E. MAXIMIZING COAGULATION EFFECTIVENESS
- F. EFFICIENT FILTER OPERATION
- G. CONSULTING ENGINEERING ASPECTS OF PLANT DESIGN
- H. HYDROGEN SULPHIDE REMOVAL

- I. TRENDS IN SLUDGE DEWATERING AND THICKENING
- J. MARSHLAND TREATMENT OF WASTEWATER
- K. ULTRA-VIOLET TREATMENT OF WASTEWATER
- L. CATHODIC PROTECTION OF PLANT EQUIPMENT
- M. AERATION TANK EXPERIMENTS
- N. GUIDELINES FOR ACCEPTING LIQUID WASTE
- O. CURRENT LEGAL ISSUES AS RELATED  
TO PLANT OPERATIONS
- P. COMPUTERS IN WATER AND WASTEWATER PLANT  
OPERATIONS

**Pre-Course Familiarization:**

Pre-course study material will not be provided. Those planning to attend should review publications dealing with secondary and tertiary water and wastewater treatment.

**Prerequisites:**

Desirably:

- (a) Two to three years operational experience in a water and/or wastewater treatment plant, as a chief operator or superintendent;
- (b) Successful completion of the Ministry of the Environment Activated Sludge Process Workshop and/or Surface Water Treatment Workshop, or equivalent.

**Passing Grade:**

Not Applicable

**Registration Fee:**

\$40.00

## **Course Description**

### **Water Treatment for Environmental Officers**

#### **Purpose**

This course is designed for Ministry new-entry personnel responsible for monitoring municipal and private water supplies, or existing staff inexperienced in this field. An overview of water treatment practices is given as well as pertinent information in the subject areas of inspection, legislation, grants, approvals and complaints.

CEU Value 3.0

#### **Scope**

- A. UNIT TREATMENT PROCESSES
- B. DISINFECTION
- C. INSTRUMENTATION, AUTOMATION, CONTROL
- D. DISTRIBUTION SYSTEMS
- E. CONSUMER TREATMENT METHODS
- F. SAMPLING
- G. INSPECTION
- H. SAFETY
- I. LEGISLATION
- J. GRANTS
- K. APPROVALS



- L. ENVIRONMENTAL ASSESSMENT
- M. EXOTIC CONTAMINANTS
- N. COMPLAINTS

**Pre-Course Familiarization:**

When preparing to attend this course, an applicant should familiarize himself with all aspects of water supply operations. Reference material will be provided.

**Pre-requisites:**

Attendance is restricted to those persons responsible for regulatory agency functions related to water supply operations.

**Passing Grade:**

Not applicable.

**Registration Fee:**

\$40.00

**Course Description**

**Municipal & Private Wastewater Treatment for  
Environmental Officers**

**Purpose:**

This workshop is principally designed for new MOE Environmental Officers and to increase on-the-job efficiency of others. Case studies will be presented for consideration and discussion. Safety awareness will be emphasized. Wastewater treatment unit processes will be examined in detail. CEU value 3.0.

**Scope:**

The following topics will be dealt with:

- A. UNIT PROCESSES
- B. EFFLUENT QUALITY
- C. INSPECTION
- D. EPA PART VII
- E. ENVIRONMENTAL ASSESSMENT
- F. TECHNICAL SUPPORT
- G. SLUDGE TREATMENT AND DISPOSAL
- H. LEGISLATION & ENVIRONMENTAL APPROVALS

- I. GRANT APPLICATION
- J. COMPLAINTS AND TROUBLESHOOTING
- K. SAFETY

**Pre-Course Familiarization:**

Pre-course study material will be provided. The applicant must ensure that he is familiar with the reference material and is prepared to discuss the topics in group discussions.

**Prerequisites:**

Attendance is restricted to those persons responsible for regulatory agency functions related to wastewater treatment.

**Passing Grade:**

70 per cent

**Registration Fee:**

\$40.00

## **Course Description**

### **Industrial Abatement - Air Pollution Control**

#### **Purpose**

This five day course, to familiarize personnel with air pollution abatement is directed primarily at Ministry new entry personnel or existing staff, inexperienced in industrial air abatement functions. An overview of air contaminating process and control technologies, as practiced by industries in Ontario, is provided. The curriculum also includes relevant subject matter in the areas of legislation, inspection, pollution measurement and sampling.

It is a prerequisite for more advanced training related to abatement methodologies employed in specific industries.

CEU Value 3.0

#### **Scope:**

- A. LEGISLATION
- B. AIR CONTAMINATING PROCESSES, CONTAMINANTS AND EFFECTS
- C. CONTROL CONCEPTS
- D. METEOROLOGY
- E. ATMOSPHERIC HAZARDOUS CONTAMINANTS
- F. AIR POLLUTION MEASUREMENT AND SAMPLING

- G. ODOURS
- H. COMBUSTION
- I. INCINERATION AND INCINERATORS
- J. HANDLING COMPLAINTS
- K. TECHNICAL SUPPORT RESOURCES
- L. ENVIRONMENTAL APPROVAL PROCESS
- M. INTERFACE WITH RESOURCES OF OTHER JURISDICTIONS

**Pre-Course Familiarization:**

When preparing for this course an applicant must study the reference material which will be provided.

**Prerequisites:**

An applicant must be responsible for functions related to air pollution abatement.

**Passing Grade:**

Those trainees who achieve a passing grade of 70 per cent will be awarded a certificate.

**Registration Fee:**

\$40.00

**Course Description:**

**Industrial Wastewater Treatment for Environmental Officers**

**Purpose:**

This course is designed to increase the knowledge of the field abatement and enforcement personnel in industrial wastewater treatment processes. An overview of the current wastewater treatment technologies as practiced in Ontario industries is presented. Also included is relevant subject matter dealing with regulatory requirements. CEU Value 3.0

**Scope:**

The course includes presentations and discussions of the following topics:

- A. UNIT TREATMENT PROCESS AND EFFLUENT QUALITY
- B. SLUDGE UTILIZATION AND DISPOSAL
- C. INSPECTION, SAMPLING AND RECORDS
- D. SAFETY
- E. LEGISLATION
- F. APPROVALS AND TECHNICAL SUPPORT
- G. COMPLAINTS
- H. EO'S DUTIES AND RESPONSIBILITIES

**Pre-Course Familiarization:**

Pre-course study material will be provided. The applicant should familiarize himself with this material and the applicable sections of the Environmental Protection and Water Resources Acts and Regulations.

**Pre-requisites:**

Attendance is restricted to those persons responsible for regulatory agency functions related to industrial wastewater treatment.

**Passing Grade:**

60 per cent

**Registration Fee:**

\$40.00

## **Course Description**

### **Waste Management for Environmental Officers**

#### **Purpose**

This course is designed to increase the knowledge of the field abatement and enforcement personnel in solid waste disposal methods. An overview of the solid waste management and disposal practices in Ontario and the relevant legislation will be presented.

CEU Value 3.0

#### **Scope:**

This course includes presentation and discussion of the following topics:

- A. SOURCES OF WASTES AND THEIR CHARACTERISTICS
- B. TREATMENT PROCESSES AND DISPOSAL
- C. LEGISLATION, GUIDELINES AND AVAILABLE  
TECHNICAL SUPPORT
- D. SITE SELECTION AND APPROVAL PROCESS
- E. ESTABLISHMENT AND OPERATION OF SITES
- F. OPERATING RECORD SYSTEM AND SITE MONITORING
- G. SITE CLOSURE PROCESS
- H. INSPECTION PROCEDURES
- I. HANDLING OF COMPLAINTS



**Pre-Course Familiarization:**

Pre-course study material will be provided. The applicant should familiarize himself with this material and the applicable sections of Environmental Protection Act, the relevant Regulations and the MOE Guidelines.

**Pre-requisites:**

Attendance is restricted to those persons responsible for regulatory agency functions related to waste management systems.

**Registration Fee:**

\$40.00

## **Course Description**

### **Visible Emissions Identification Certificate Course**

#### **Purpose:**

The Visible Emissions Identification Certificate Course is designed to train and certify personnel as being proficient in the identification of the opacities of visible emissions. It will also assist the provincial officer appearing in court as an expert witness. The course is a combination of lecture and demonstration, with practice. Recertification is required every twelve months.

#### **Scope:**

The course covers the following topics:

- A. VISIBLE EMISSIONS - THEIR CAUSE AND REGULATION
- B. CLASSIFICATION AND IDENTIFICATION OF SOURCES
- C. PRINCIPLES OF COMBUSTION
- D. METEOROLOGICAL FACTORS IN READING VISIBLE EMISSIONS
- E. LEGAL ASPECTS AND COURTROOM APPEARANCES
- F. PRACTICE IN IDENTIFICATION OF OPACITIES OF VISIBLE EMISSIONS.

**Pre-Course Familiarization:**

When preparing to attend this course the applicant should read in advance the Visible Emissions Identification Manual, which will be sent out with pre-course material.

**Prerequisites:**

None

**Passing Grade:**

- (a) 70 per cent on a written exam and;
- (b) Identification of the opacity of a set number of consecutive visible emissions within the permitted deviation standards.

**Registration Fee:**

- (a) For the Certificate Course:
  - (1) Ontario Government and Municipal Employees \$40.00
  - (2) Others \$80.00
- (b) For Recertification
  - (1) Ontario Government and Municipal Employees \$10.00
  - (2) Others \$20.00

**Course Description**

**Environmental Law Enforcement**

**Purpose:**

This one week course is designed to upgrade the knowledge and skills of Provincial Officers who are responsible for carrying out investigations of incidents or alleged incidents of pollution of the environment. The course is held at the Ontario Police College (OPC) Aylmer, Ontario. Students will be provided with accommodation and meals. CEU VALUE 3.0.

**Scope:**

The following topics will be covered:

- A. JURISDICTIONAL PROBLEMS IN ENVIRONMENTAL LAW
- B. MINISTRY LEGISLATION
- C. CONSTITUTION ACT
- D. INVESTIGATIVE TECHNIQUES
- E. EVIDENCE, COURTROOM PROCEDURES
- F. PROVINCIAL OFFENCES ACT
- G. CONTROL ORDERS

**Pre-Course Familiarization:**

Pre-course study material will be provided. Those attending should carefully review the Acts and Regulations pertaining to environmental protection.

**Prerequisites:**

Attendance is restricted to Ministry staff.

**Passing Grade:**

Not applicable

**Registration Fee:**

There is no registration fee but costs billed by the OPC are recoverable. Charges, including accommodation and meals are approximately \$300.00 per student.

## Course Description

### Sewer and Watermain Design Courses

#### Purpose:

This course, developed and conducted jointly with the Ontario Municipal Engineers Association, is intended to broaden the understanding and knowledge of personnel who are engaged in the design of Sewer and Watermain Systems. Topics covered on the first half-day are common to both course segments, Sewer Design and Watermain Design. During the subsequent four and one-half days, each is held separately. The selection of the segment (sewer design or watermain design) should be clearly identified in the application. CEU Value 3.0.

#### Scope:

##### Sewer Design

- A. PROJECT PROCEDURES
- B. PHYSICAL LAYOUT OF SEWER  
& WATERMAIN SYSTEMS
- C. INTRODUCTION TO STORM  
WATER MANAGEMENT

##### Watermain Design

- A. PROJECT PROCEDURES
- B. PHYSICAL LAYOUT OF SEWER  
& WATERMAIN SYSTEMS
- C. WATERMAIN PIPE MATERIALS
- D. SOURCES OF WATER SUPPLY

D. SEWER PIPE MATERIALS	E. WATERMAIN INSULATION
E. HYDROLOGY IN URBAN AREAS	F. WATERMAIN APPURTENANCES
F. SEWER DESIGN GENERAL	AND TESTING
G. SEWER DESIGN PROBLEM	G. WATER VALVES
CALCULATIONS	H. HOW DESIGN AFFECTS
H. DESIGN CONSIDERATIONS WITH	MAINTENANCE
OTHER UTILITIES	I. DESIGN CONSIDERATIONS
I. STRUCTURAL ASPECTS OF DESIGN	WITH OTHER UTILITIES
J. SEWER APPURTENANCES AND HOW	J. ESTIMATING WATER DEMAND
DESIGN AFFECTS MAINTENANCE	K. BASIC HYDRAULICS
K. HYDRAULIC ASPECTS OF DESIGN	L. DESIGN PROBLEM
L. PROBLEM SOLVING OF JUNCTION	CALCULATIONS
MANHOLES	M. DESCRIPTION OF LOOP
M. HYDROGRAPH TECHNIQUES	ANALYSIS
N. MAJOR-MINOR CONCEPTS AND	N. WATERMAIN CORROSION
DESIGN	

**Pre-Course Familiarization:**

- (a) Review the lecture notes and other material mailed out for pre-course study;
- (b) Answer the pre-course study problems, which will be discussed during the course.

**Prerequisites:**

Candidates for this course should have some basic understanding of sewer and watermain design and should be employed, at least in part, in the design of Sewer and Watermain Systems.

**Registration Fee:**

For live-in students, the fee is \$445.00 (includes materials, meals and double room accommodation for five (5) days) at Nottawasaga Inn, Alliston, Ontario.

For commuters, the fee is \$235.00 which includes reference materials, lunch daily and coffee.

Registration fee must be made payable to **Municipal Engineers Association.**



**Course Description**

**MEA/MOE Inspector's Course**

**Construction of Sewers and Watermains**

**Purpose:**

This course, developed and conducted jointly with the Ontario Municipal Engineers Association, is intended to broaden the understanding and knowledge of persons engaged in inspecting sewer and water-main construction projects. CEU Value 3.5.

**Scope:**

The course includes presentations on and discussions of the following topics:

- A. BASIC ELEMENTS OF CONTRACT DOCUMENTS
- B. ENVIRONMENTAL CONSIDERATIONS
- C. CONSTRUCTION LAYOUT
- D. TRAFFIC CONTROL
- E. SEWER INSTALLATION AND TESTING
- F. SEWER AND WATERMAIN DESIGN PRINCIPLES
- G. CONSTRUCTION SAFETY

- H. EXCAVATION AND BACKFILL
- I. DEWATERING METHODS
- J. PIPE MATERIAL AND INSTALLATION
- K. WATERMAIN INSTALLATION, TESTING, CLEANING  
AND DISINFECTION
- L. SOILS IN CONSTRUCTION
- M. BLASTING TECHNIQUE AND BLASTING CONTROL
- N. RESTORATION
- O. INSPECTOR'S DUTIES AND RECORDS
- P. TUNNELLING

**Pre-Course Familiarization:**

Pre-course study material including calculations to be completed for classroom discussion will be provided. Personnel attending this course should be familiar with the Regulations in their own area.

**Prerequisites:**

Those attending the course should be employed in the private or public sector where a significant portion of the job function is inspection of Sewers and Watermains construction projects.

**Passing Grade:**

60 per cent

**Registration Fee:**

This course will be held at Nottawasaga Inn, Alliston, Ontario. For live-in students the fee is \$445.00 which includes course materials, meals and double room accommodation for five (5) days.

For commuters, the fee is \$235.00 which includes lunch and coffee breaks.

Registration fee must be made payable to **Municipal Engineers Association.**

## **COURSE DESCRIPTION**

### **INTRODUCTORY ENVIRONMENTAL NOISE COURSE**

#### **Purpose**

The course is designed for new staff and to increase on the job efficiency of others. It is prerequisite for the Environmental Noise Certificate Course. The purpose of the course is to familiarize the trainees with environmental noise problems, and the basic qualitative and quantitative methods of noise assessment. Upon completion of the course the trainee will be able to investigate noise complaints of simple nature and will be familiar with the resources available for dealing with more complex noise problems.

CEU Value 3.0

#### **SCOPE:**

The course covers the following topics:

- A. BASIC ACOUSTICS CONCEPTS
- B. INTRODUCTORY ENVIRONMENTAL NOISE THEORY
- C. SOUND LEVEL MEASUREMENTS AND BASIC INSTRUMENTATION
- D. INTRODUCTION TO  $L_{eq}$  AND OTHER NOISE DESCRIPTORS
- E. MEASUREMENT AND PREDICTION OF TRAFFIC NOISE
- F. SOUND LEVEL ADJUSTMENTS

- G. ESTABLISHMENT OF NOISE CRITERIA
- H. NOISE CONTROL BY-LAW OVERVIEW
- I. INVESTIGATION OF STATIONARY SOURCE NOISE IMPACT  
INDUSTRIAL NOISE AND BLASTING
- J. NOISE COMPLAINT INVESTIGATION PROCEDURE
- K. WORKSHOPS OF SIMPLE SOUND LEVEL MEASUREMENTS AND  
TRAFFIC NOISE CALCULATIONS
- L. EXAMINATION

**PRE-COURSE FAMILIARIZATION:**

Pre-course study material, including the Ministry manual, will be provided. Those attending should review and be familiar with format of the Model Municipal Noise Control By-Law.

**PREREQUISITES:**

Desirably Grade 12 academic standing.

**PASSING GRADE:**

60% for Workshop Exercises and Examination.

**REGISTRATION FEE:**

(1)	Ontario Government and Municipal Employees	\$ 50.00
(2)	All others	\$100.00

## **Course Description**

### **Environmental Noise Certificate Course**

#### **Purpose:**

The course is designed to upgrade the knowledge of staff currently involved in noise investigations of simple nature. It consists of two parts, the course and a take-home assignment. Upon successful completion of the course and the take-home assignment, the trainee will be qualified to fulfill the duties of a Municipal Noise Control Officer. A Certificate of Competency in Environmental Noise Technology will be awarded.

CEU Value 3.0

#### **Scope:**

The course covers the following topics:

##### **PART 1**

- A. COMMUNITY NOISE CHARACTERISTICS AND AUTOMATIC NOISE MONITORS
- B. IMPULSE NOISE MEASUREMENTS, STANDARDS AND CRITERIA
- C. FREQUENCY ANALYSIS OF NOISE, TONALITY, TAPE RECORDING
- D. VIBRATION IMPACT ANALYSIS, MEASUREMENT AND CRITERIA
- E. BLASTING NOISE AND VIBRATION IMPACT ASSESSMENT, MEASUREMENTS AND PREDICTION CALCULATION
- F. INDUSTRIAL AND COMMERCIAL NOISE SOURCES IMPACT ANALYSIS, ADVANCED PROCEDURES

- G. NOISE AND VIBRATION ABATEMENT TECHNIQUES
- H. NOISE CONTROL BY-LAW (COMPREHENSIVE OPTION),  
PREPARATION AND IMPLEMENTATION OF A NOISE BY-LAW
- I. WORKSHOPS: INSTRUMENTATION SELECTION, MEASUREMENTS,  
COMPLAINT INVESTIGATION (CASE STUDIES)
- J. EXAMINATION

## **PART 2 - TAKE-HOME ASSIGNMENT**

SELECTED PROBLEMS IN ENVIRONMENTAL ACOUSTICS INCLUDING CASE STUDIES AND DETAILED REPORTS ON TRAINEES' OWN NOISE INVESTIGATIONS.

This part is compulsory for those wishing to receive a Certificate to fulfill duties of a Municipal Noise Control Officer.

### **PRE-COURSE FAMILIARIZATION:**

Pre-course study material, including the Ministry manual, will be provided. Those attending should be familiar with the format of the Model Municipal Noise Control By-Law, and should review basic procedures and guidelines from the noise By-law document.

### **Prerequisites:**

Successful completion of the Introductory Environmental Noise Course, or prior documented formal training in acoustics subjects at the Introductory Course level.

**Passing Grade:**

70% for Workshop Exercises and Examination. 85% for the  
Take-home Assignment.

**Registration Fee:**

(1)	Ontario Government and Municipal Employees	\$ 50.00
(2)	All others	\$100.00



## **Course Description**

### **Environmental Noise In Land Use Planning**

#### **Purpose:**

The Course on Environmental Noise in Land use Planning discusses the impact of noise on land use. It is designed for individuals responsible for the preparation, review and approval of new land use development including municipal and provincial planning and building department staff, urban planners, engineers, architects and developers. CEU Value 3.0.

#### **Scope:**

The course includes a review of relevant topics included in the Environmental Noise Certificate course and covers the following subjects:

- A. LAND USE PLANNING CONCEPTS AND PROCEDURES
- B. PLANNING PROCESS IN ONTARIO
- C. ANALYSIS OF COMMUNITY NOISE
- D. SOUND LEVEL LIMITS AND CRITERIA
- E. PREDICTION OF ROAD TRAFFIC AND TRAIN  
NOISE LEVELS

- F. AIRCRAFT NOISE CONTOURS; ANALYSIS OF NOISE  
CONTROL MEASURES
- G. PREDICTION OF SOUND BARRIER ATTENUATION
- H. BUILDING ACOUSTICS AND MATERIAL
- I. MEASUREMENT OF SOUND WITH SOUND LEVEL METERS.
- J. CALCULATION WORKSHOP
- K. REPORT WRITING AND PROCEDURES

**Pre-Course Familiarization:**

Pre-course study material, including manuals will be provided. Candidates, who have not had suitable previous formal training are advised to review the relevant parts of the Introductory and Certificate Environmental Noise courses.

**Passing Grade:**

Candidates achieving a passing grade of 60% will be awarded a Certificate denoting successful completion of the course.

**Registration Fee:**

(1)	Ontario Government and Municipal Employees	\$ 50.00
(2)	All others	\$100.00

PROGRAM SCHEDULE 1986/87

PROGRAM	CAPACITY	DATES		LOCATION
Basic Sewage Treatment	25	Sept. 8 - 12	1986	Training Centre
		Nov. 24 - 28	1986	Training Centre
		Feb. 2 - 6	1987	Training Centre
		Apr. 27 - 30	1987	Training Centre
Activated Sludge Process	25	Oct. 27 - 31	1986	Training Centre
		Feb. 16 - 20	1987	Training Centre
		May 18 - 22	1987	Training Centre
Sludge Digestion and Handling	25	Apr. 6 - 10	1987	Training Centre
Digester Gas Systems	25	Dec. 1 - 5	1986	Training Centre
Wastewater Collection Systems	25	March 2 - 6	1987	Training Centre
O & M Wastewater Pump Stations	25	May 4 - 8	1987	Training Centre

# PROGRAM SCHEDULE 1986/87

PROGRAM	CAPACITY	DATES		LOCATION
Control of Liquid Industrial Waste	25	May 18 - 22	1987	Training Centre
Basic Water Treatment	25	Oct. 20 - 25	1986	Training Centre
		Dec. 8 - 12	1986	Training Centre
		Feb. 23 - 27	1987	Training Centre
		May 11 - 15	1987	Training Centre
Surface Water Treatment	25	Jan. 19 - 23	1987	Training Centre
		Mar. 23 - 27	1987	Training Centre
Water Distribution Systems	25	Sept. 29-Oct. 3	1986	Training Centre
Water Supply Systems	25	Feb. 2 - 6	1987	Training Centre
Basic Gas Chlorination	25	Sept. 15 - 19	1986	Training Centre
		Nov. 24 - 28	1986	CHATHAM
		Jan. 12 - 16	1987	Training Centre
		Mar. 16 - 20	1987	Training Centre
Laboratory Skills	15	Oct. 6 - 10	1986	Training Centre
		Jan. 26 - 30	1987	Training Centre
		Mar. 30 - Apr. 3	1987	Training Centre

PROGRAM SCHEDULE 1986/87

PROGRAM	CAPACITY	DATES			LOCATION
Confined Space Entry	25	Nov.	3 - 8	1986	Training Centre
		Jan.	5 - 9	1987	Training Centre
		Mar.	9 - 13	1987	Training Centre
Instrumentation and Control	25	Nov.	3 - 7	1986	Training Centre
		Feb.	9 - 13	1987	Training Centre
		Apr.	27 - May 1	1987	Training Centre
Preventive Maintenance	15	Oct.	27 - 31	1986	Training Centre
		Dec.	15 - 19	1986	Training Centre
		Apr.	6 - 10	1987	Training Centre
Advanced Water/Wastewater	25	Feb.	23 - 27	1987	Training Centre
Water Treatment for EOs	25	Oct.	6 - 10	1986	Training Centre
Wastewater Treatment for EOs	25	Dec.	15 - 19	1986	Training Centre
Air Abatement for EOs	25	Nov.	17 - 21	1986	Training Centre
Industrial Wastewater Treatment for EOs	25	Jan.	12 - 16	1987	Training Centre
Waste Management for EOs	25	Oct.	20 - 24	1986	Training Centre

# PROGRAM SCHEDULE 1986/87

PROGRAM	CAPACITY	DATES		LOCATION
Visible Emissions		June 1 - 29	1987	
Env. Law Enforcement	24	Sept. 22-26	1986	Ontario Police (MOE ONLY) College, Aylmer
Sewer & Watermain Design	60	Sept. 22-26	1986	Nottawasaga Inn (Registration Alliston, Ont. Sept. 21/86)
MEA/MOE Construction Inspectors	60	Mar. 30-Apr. 3	1987	Nottawasaga Inn (Registration Alliston, Ont. Mar. 29/87)
Environmental Noise 1	25	Apr. 6-10	1987	MOE Laboratories
Environmental Noise 2	25	May 25-29	1987	MOE Laboratories
Environmental Noise in Land Use Planning	50	Apr. 27-May 1	1987	MOE Laboratories

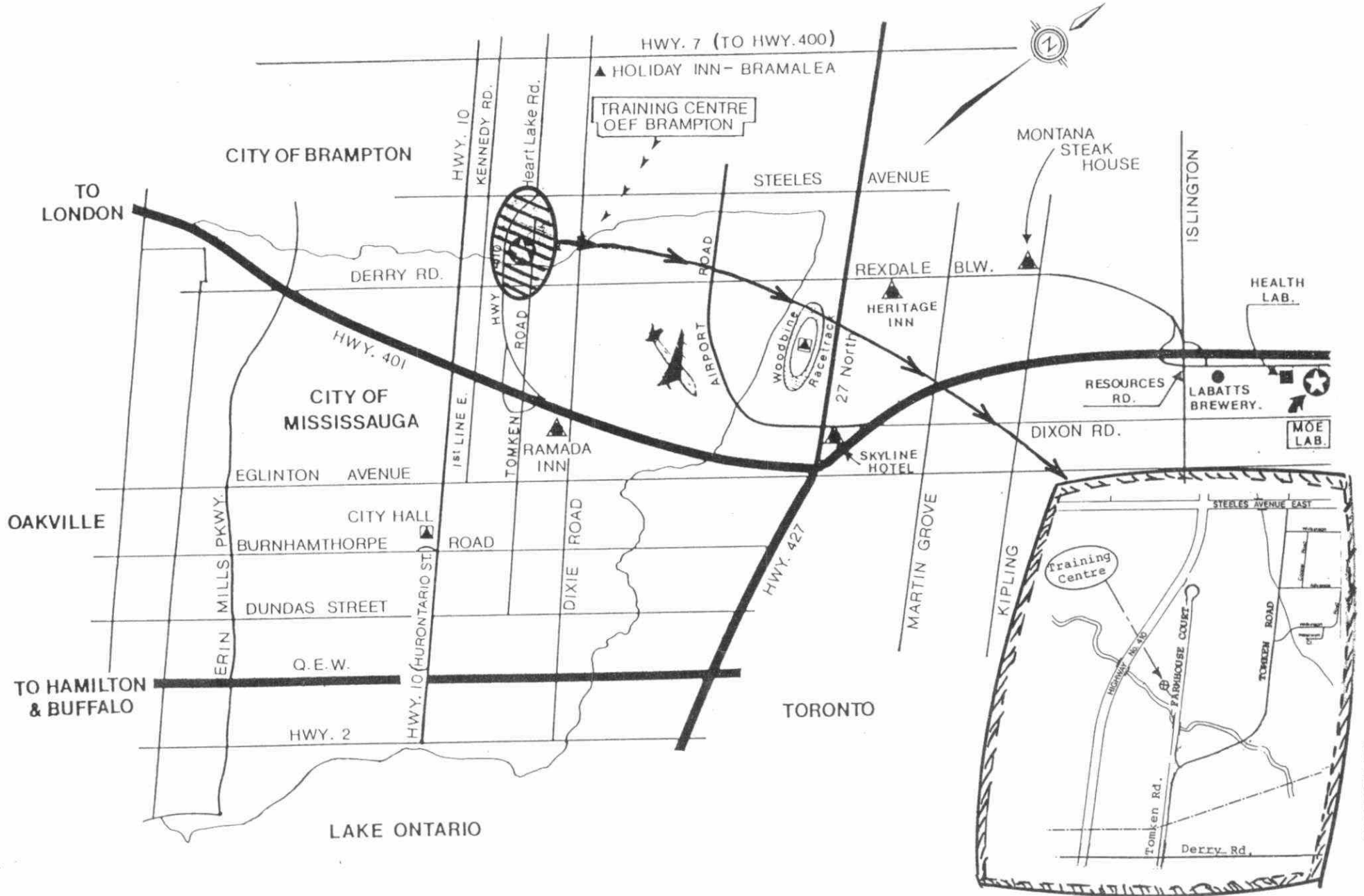
TRAINING AND CERTIFICATION  
CALENDAR FOR 1986-1987

COURSES	SEPT/86				OCT/86				NOV/86				DEC/86				JAN/87			
	8	15	22	29	6	13	20	27	3	10	17	24	1	8	15	22	5	12	19	26
1.BASIC SEWAGE TREATMENT OPS	X											X								
2.ACTIVATED SLUDGE PROCESS								X												
3.SLUDGE DIGESTION & HANDLING																				
4.DIGESTER GAS SYSTEMS O & M													X							
5.WW COL.SYSTEMS O & M																				
6.O & M WW PUMP STATIONS																				
7.CONTROL OF LIQUID IND WASTE																				
8.BASIC WATER TREATMENT OPS							X						X							
9.SURFACE WATER TREATMENT OPS																		X		
10.WATER DISTRIBUTION SYS. OPS				X																
11.WATER SUPPLY SYS. OPS																				
12.BASIC GAS CHLORINATION		X										X (CHATHAM)						X		
13.LABORATORY SKILLS					X															X
14.CONFINED SPACE ENTRY									X								X			
15.INSTRUMENTATION & CONTROL									X											
16.PREVENTIVE MAINTENANCE								X							X					
17.ADVANCED WATER & WASTEWATER																				
18.WATER TREATMENT FOR EOs					X															
19.WASTEWATER TREATMENT FOR EOs															X					
20.AIR ABATEMENT FOR EOs											X									
21.INDUSTRIAL WWT FOR EOs																		X		
22.WASTE MANAGEMENT FOR EOs							X													
23.VISIBLE EMISSIONS																				
24.ENV. LAW ENFORCEMENT				X																
25.DESIGN SEWER AND WATERMAIN				X																
26.MEA/MOE CONSTR INSPECTORS																				
27.ENV NOISE 1																				
28.ENV NOISE 2																				
29.ENV NOISE IN LAND USE PLANNING																				

CALENDAR 86/87(CONTD)

COURSES	FEB/87				MAR/87					APR/87				MAY/87				JUNE/87				
	2	9	16	23	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29
1.BASIC SEWAGE TREATMENT OPS	X												X									
2.ACTIVATED SLUDGE PROCESS			X													X						
3.SLUDGE DIGESTION & HANDLING										X												
4.DIGESTER GAS SYSTEMS O & M																						
5.WW COL.SYSTEMS O & M					X																	
6.O & M WW PUMP STATIONS														X								
7.CONTROL OF LIQUID IND WASTE																X						
8.BASIC WATER TREATMENT OPS				X											X							
9.SURFACE WATER TREATMENT								X														
10.WATER DISTRIBUTION SYS																						
11.WATER SUPPLY SYS OPS	X																					
12.BASIC GAS CHLORINATION							X															
13.LABORATORY SKILLS									X													
14.CONFINED SPACE ENTRY					X																	
15.INSTRUMENTATION & CONTROL		X											X									
16.PREVENTIVE MAINTENANCE										X												
17.ADVANCED WATER & WASTEWATER				X																		
18.WATER TREATMENT FOR EOs																						
19.WASTEWATER TREATMENT FOR EOs																						
20.AIR ABATEMENT FOR EOs																						
21.INDUSTRIAL WWT FOR EOs																						
22.WASTE MANAGEMENT FOR EOs																						
23.VISIBLE EMISSIONS																		X	X	X	X	X
24.ENV. LAW ENFORCEMENT																						
25.DESIGN SEWER AND WATERMAIN																						
26.MEA/MOE CONSTR INSPECTORS									X													
27.ENV NOISE 1										X												
28.ENV NOISE 2																	X					
29 ENV NOISE IN LAND USE PLANNING													X									





HOTEL	TELEPHONE	SINGLE	DOUBLE
BRISTOL PLACE 950 DIXON RD	675-9444	\$82.00	\$94.00
CAMBRIDGE HOTEL DIXON RD. HWY 401	249-7671	47.00	47.00
CARA INN 6257 AIRPORT RD.	678-1400	54.00	64.00
CONSTELLATION HOTEL 900 DIXON ROAD	675-1500	58.00	70.00
HERITAGE INN 385 REXDALE BLVD	742-5510	40.00	45.00
HOLIDAY-INN (Airport) 970 DIXON ROAD	675-7611	57.00	67.00
HOWARD JOHNSON'S (Airport Hotel) 801 DIXON ROAD	675-6100	57.00	67.00
RAMADA INN 544 DIXIE RD. (Mississauga)	624-1144	59.00	59.00
SKYLINE HOTEL 655 DIXON ROAD	244-1711	57.00	57.00
HOLIDAY-INN(Bramalea) 30 PEEL CENTRE DR	792-9900	56.00	66.00
RELAX INN 5599 AMBLER DR (Mississauga)	624-9500	36.95	40.95
JOURNEY'S END 1500 MATHESON BLVD (Mississauga)	624-6900	39.88	46.88

The above government rates were provided by the management of each hotel and are subject to change with time. When requesting reservations, the actual government rate should be confirmed.

To qualify for the above room rates, please inform the hotel registration clerk that you are attending a Ministry of the Environment course.

TD  
178.4  
.06  
I542  
1986